

Amendments to Claims

Please amend the claims as follows:

1.(currently amended) An inverse multiplexer device comprising:

_____ an input port for receiving a stream of data packets;

_____ a plurality of output ports for connection to outgoing physical links, transmit buffers for preparing outgoing packets;

_____ a ~~first~~ expansion port capable of receiving packets from said transmit buffers and transferring them through a corresponding expansion port on an other like inverse multiplexer device to designated output physical links on the said other inverse multiplexer device; and
_____ a controller for outputting the data packets ~~on an inverse multiplex group consisting of any of said outgoing physical links on said inverse multiplexer device and said designated output physical links on said other like inverse multiplexer device~~ links in accordance with an inverse multiplex protocol;

_____ - whereby said inverse multiplexer devices can be cascaded to increase the number of output links that can be accommodated by transmitting outgoing packets of said inverse multiplex group on both said outgoing physical links of said inverse multiplexer device and said output physical links of said other inverse multiplexer device.

2.(currently amended) An inverse multiplexer device as claimed in claim 1, wherein said first expansion port is connected between said transmit buffers and said output ports associated therewith.

3.(currently amended) An inverse multiplexer device as claimed in claim 2, further comprising connections normally connecting said output ports with their respective associated transmit buffers, and switches in said connections to divert packets on command through said first expansion port to output links on said other like inverse multiplexer device.

4.(currently amended) An inverse multiplexer device as claimed in claim 3, wherein said first expansion port is connectable into a parallel ring.

5.(currently amended) An inverse multiplexer device as claimed in claim 4, wherein said parallel ring carries control messages between said inverse multiplexer devices.

6.(currently amended) An inverse multiplexer device as claimed in claim 4, further comprising address registers for storing ~~the an~~ address on said ring of the transmit buffers and output ports connected to ~~the bussaid ring~~.

7.(currently amended) An inverse multiplexer device as claimed in claim 6 wherein said ring has a control port common to transmit and receive directions.

8.(currently amended) An inverse multiplexer device as claimed in claim 1, further comprising a plurality of additional input ports for receiving streams of packets from a plurality of incoming physical links, receive buffers for receiving incoming packets on said incoming physical links, an additional output port for outputting a single stream of packets received on said incoming physical links, and said first expansion port also being connected between said additional input ports and said receive buffers so as to permit packets arriving on a physical link connected to said other inverse multiplexer ~~the like~~ device to be diverted to one of said receive buffers.

9.(currently amended) An inverse multiplexer device as claimed in claim 4, wherein each said first expansion port comprises a message assembler for assembling outgoing bytes into messages ~~with address containing the a~~ destination address, and an address comparator for extracting incoming bytes destined for ~~the said inverse multiplexer~~ device.

10.(currently amended) An inverse multiplexer device as claimed in claim 9, wherein the said first expansion port further comprises a master ring controller for permitting ~~the said inverse multiplexer~~ device to act as a master and control overall operation of the ring.

11.(currently amended) A method of inverse multiplexing stream of data packets comprising the steps of:

providing at least two like inverse multiplexer devices, each said inverse multiplexer device having an input port for receiving a stream of data packets, a plurality of output ports for connection to outgoing physical links, transmit buffers for preparing outgoing packets, and a first expansion port capable of receiving packets from said transmit buffers and transferring them through a corresponding expansion port on ~~the another~~ like inverse multiplexer device to designated output links on the other like inverse multiplexer device;

receiving a stream of data packets on the input port of one of said inverse multiplexer devices forming a master;

forming an inverse multiplex group comprising physical links connected to at least one

other said inverse multiplexer device; and

transmitting said received packets over said physical links forming the inverse multiplex group in accordance with an inverse multiplexing protocol by passing said packets assigned to links on said other device through said expansion port.

12.(currently amended)A method as claimed in claim 11, wherein said packets are passed to the other inverse multiplexer device over a parallel ring.

13.(original)A method as claimed in claim 12, wherein said parallel ring is controlled from a common expansion port.

14.(currently amended)A method as claimed in claim 13, wherein said parallel ring carries control messages between ~~the connected~~ said like inverse multiplexer devices.

15.(currently amended)A method as claimed in claim 14, wherein said control messages comprise a data byte and a control byte.

16.(currently amended)A method as claimed in claim 15, wherein said control byte includes ~~the~~ a destination address for ~~the~~ said data byte.

17.(currently amended)A method as claimed in claim 16, wherein said first expansion port strips incoming bytes from said control messages when the destination address matches an address on the inverse multiplexer device and passes the extracted bytes to an appropriate the ~~appropriate one of said output ports~~ ~~port of delineation block~~ respectively for transmit and receive bytes.

18.(currently amended)A method as claimed in claim 17, wherein said first expansion port controls a switch connecting the transmit buffers to associated output ports on the same inverse multiplexer device.